REMARKS

Claims 1–20 are pending in the present application.

Reconsideration of the claims is respectfully requested.

35 U.S.C. § 112, Second Paragraph (Definiteness)

Claims 6–7 and 13–14 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. This rejection is respectfully traversed.

As taught in the specification, when a load of sufficiently small impedance (50-100 Ω) is connected to the output port of a SAW resonator in parallel with the stray capacitance at the output, C_{O2}, the stray capacitance at the output becomes insignificant, allowing the series resonance circuit including the SAW resonator to be tuned with a single variable capacitance:

> FIGURE 2B illustrates in greater detail a circuit diagram for a two port SAW resonator circuit in the exemplary oscillator according to another embodiment of the present invention. In this alternative embodiment, the two port SAW resonator circuit 102 contains only a single inductance L_{O1} and a single tuning capacitance C_{TUNE1} at only one port of the SAW resonator 200. While providing inductances L_{O1} and L_{O2} and tuning capacitances C_{TUNE1} and C_{TUNE2} at both ports of the SAW resonator 200 as depicted in FIGURE 2 provides greater tune range, when SAW resonator circuit 102 drives a load (not shown) of approximately 50-100 ohms (Ω) or less in parallel with stray capacitance C_{O2}, the impedance of stray capacitance C_{O2} becomes insignificant and the series resonator within SAW resonator 200 may be tuned utilizing only a single tuning capacitance C_{TUNE1} at the input port for the SAW resonator 200. Accordingly, the second inductance L_{O2} and tuning capacitance C_{TUNE2} are optional.

Specification, page 14, line 20 through page 15, line 13. As well known in the art, where one of two parallel impedances has an impedance value substantially lower than the other (e.g., by an order of

magnitude or more), the lower impedance value dominates an impedance value for an equivalent circuit comprising a single impedance.

Applicant respectfully notes that claims 6 and 13 were contained in the application as filed with the limitations at issue.

Therefor, the rejection under 35 U.S.C. § 112, second paragraph has been overcome.

35 U.S.C. § 102 (Anticipation)

Claims 1, 5, 8, 12, 15, 16 and 18–20 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,239,664 to *Northam*. This rejection is respectfully traversed.

Independent claims 1 and 8 each recite at least one inductance coupled to a port of the SAW resonator, connected and sized to approximately tune out a stray capacitance seen at the port within an equivalent circuit for the SAW resonator at a selected frequency. Similarly, independent claim 15 recites that a stray capacitance seen within an equivalent circuit for the SAW resonator at the port is approximately tuned out at a selected frequency. Such a feature is not found in the cited reference.

Northam describes stray capacitance (internal and package capacitance C_0) of SAW resonator 202. In addition, *Northam* discloses an inductor 230 (and capacitor 231) connected in parallel with the SAW resonator 202, and an inductor 235 connected in series with an input port of the SAW resonator. However, *Northam* does not state that either of inductors 230 or 235 "approximately tune out" the stray capacitance C_0. Instead, *Northam* merely states that

> The performance of low phase noise VCSO 125 is improved by the addition of inductor 230 in parallel with SAW resonator 202 (i.e., with switches S1 and S2

> closed). Inductor 230, which has a value of 12.75 nH, is calculated to resonate with the 2 pF value of C.sub.o, the internal and package capacitance of SAW resonator 202.

Northam, column 7, lines 34–39. Moreover, *Northam* incorrectly models the stray capacitance for a two port, single pole SAW resonator as a capacitor connected in parallel with a series resistor-capacitor-inductor circuit representing the SAW resonator. As taught in the specification, the stray capacitance should actually be modeled as one capacitor between the SAW resonator input port and ground and a second capacitor between the SAW resonator output port and ground. Effectively tuning out such stray capacitance thus requires one inductance connected between the SAW resonator input and ground and a second inductance connected between the SAW resonator output port and ground (although the latter may be eliminated with a sufficiently low impedance load). Neither inductor 230 nor inductor 235 in *Northam* is "connected and sized to approximately tune out a stray capacitance seen at the port within an equivalent circuit for the SAW resonator at a selected frequency," as recited in the claims.

Therefor, the rejection under 35 U.S.C. § 102 has been overcome.

35 U.S.C. § 103 (Obviousness)

Claims 1–3, 5–10 and 12–20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,608,360 to *Driscoll* in view of *Northam*. This rejection is respectfully traversed.

As previously noted, the independent claims each recite negating or "tuning out" parasitic or stray capacitances within a SAW resonator, allowing a series resonant circuit to be formed by the SAW resonator and a variable tuning capacitor coupled to a port of the SAW resonator. In general, as taught in *Northam* and described in the specification, efforts to tune SAW resonators in order to achieve high Q filters have addressed parasitic capacitance within the SAW filters by suppressing the secondary responses introduced by such capacitances. Specification, page 3, line 19 through page 5, line 17; *Northam*, column 6, line 15 through column 7, line 33.

Both *Driscoll* and *Northam* are silent as to tuning out parasitic capacitances within a SAW resonator in order to permit formation of a series resonant circuit by a SAW resonator and an external (adjustable) capacitance. In fact, *Driscoll* teaches away from such a feature by indicating the "[f]inely tuning out the parasitic capacitances is not required . . ." *Driscoll*, column 5, line 41–41. As noted above, *Northam* fails to correctly model the stray capacitance, and therefor incorrectly connects inductor 230 across the input and output ports of SAW resonator 202 rather than between the input port and ground (and optionally also between the output port and ground).

Therefore, the rejection of claims 1–3, 5–10 and 12–20 under 35 U.S.C. § 103 has been overcome.

SUMMARY

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at ***dvenglarik@davismunck.com***.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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